

Appl. No. 09/905,349
A-67178-1/MSS
463035-420

The listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A gas delivery metering tube for delivering a gas, comprising:

an elongated outer tube having an inlet end and a closed end, and one or more arrays of orifices formed in said outer tube and extending along the substantial length of said outer tube;

an elongated inner tube having open inlet and outlet ends, said inner tube being nested and axially aligned inside of said outer tube forming an effective annular space there between, and wherein said inner tube extends a distance at least encompassing the arrays of orifices in the outer tube and said outlet end of said inner tube terminates prior to the closed end of said outer tube; and

a gas flow divider positioned adjacent the inlet ends of the inner and outer tubes and having a first gas flow path coupled to said inner tube and a second gas flow path coupled to the annular space between the inner and outer tubes, the gas flow divider comprising a disk having a central orifice forming said first gas flow path and a flange positioned on the inlet end of the inner tube and the flange having a lip with a plurality of small orifices forming said second gas flow path,

the gas flow divider configured to divide gas from a single gas supply port coupled to one end of the gas delivery metering tube into said first gas flow path into the inner tube and said second gas flow path into the annular space, wherein gas in said first gas flow path travels out of the outlet end of the inner tube and flows ~~back at~~ toward the closed end of the outer tube and back into the annular space, and wherein the array of orifices in said outer tube are configured to establish uniform backing pressure within the annular space and to provide uniform gas flow along the length of the outer tube.

Claims 2-3 (canceled)

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Claim 4 (previously presented): The gas delivery metering tube of claim 1 wherein the cross sectional area of the inside of said inner tube is approximately equal to the total cross sectional area of said plurality of small orifices in said flow divider.

Claim 5 (original): The gas delivery metering tube of claim 1 further comprising a single gas supply port coupled to the inlet end of said inner and outer tube for supplying gas to said metering tube.

Claim 6 (original): The gas delivery metering tube of claim 5 wherein said gas supply port comprises a block having a pocket formed therein, said pocket being sealed with a cover to create a confined passage, and a gas supply connector coupled to said pocket for receiving a gas and a hollow tube assembly coupled to said pocket and said inlet end of the inner and outer tubes for conveying the gas.

Claim 7 (original): The gas metering tube of claim 1 wherein one or more standoff spacers are attached to said inner tube to axially align the inner tube inside said outer tube.

Claim 8 (original): The gas delivery metering tube of claim 1 wherein said metering tube is used in a chemical vapor deposition system.

Claim 9 (original): In combination, the gas delivery metering tube of claim 1 and at least one injector assembly having at least one port for receiving said gas delivery metering tube.

Claim 10 (original): In combination, the gas delivery metering tube of claim 1 and at least one shield assembly having at least one plenum for receiving said gas delivery metering tube.

Claim 11 (currently amended): A gas delivery metering tube for delivering a gas, comprising:

an elongated outer tube having an inlet end and a closed end, and one or more arrays of orifices formed in said outer tube and extending along the substantial length of said outer tube;

an elongated inner tube having open inlet and outlet ends, said inner tube being nested and axially aligned inside of said outer tube forming an effective annular space there between, and wherein said inner tube extends a distance at least encompassing the arrays of orifices in the

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outer tube and said outlet end of said inner tube terminates prior to the closed end of said outer tube;

a gas flow divider positioned adjacent the inlet ends of the inner and outer tubes and having a first gas flow path coupled to said inner tube and a second gas flow path coupled to the annular space between the inner and outer tubes, the gas flow divider comprises a disk having a central orifice forming said first gas flow path and a plurality of small orifices forming said second gas flow path, and the gas flow divider comprises a flange on the inlet end of said inner tube, said flange having a lip containing the plurality of small orifices which form the second gas flow path wherein the gas flow divider divides a gas into a first gas flow into the inner tube and a second gas flow into the annular space, said first gas flow travels out of the outlet end of the inner tube ~~and flows back at~~ towards the closed end of the outer tube and back into the annular space; and

a single gas supply port coupled to the inlet end of said inner and outer tube for supplying gas to said metering tube, wherein said gas flow divider conveys gas to opposite ends of said metering tube while said single gas supply port is connected to only one end, said gas supply port comprises a block having a pocket formed therein, said pocket being sealed with a cover to create a confined passage, and a gas supply connector coupled to said pocket for receiving a gas, and a hollow tube assembly coupled to said pocket and said inlet end of the inner and outer tubes for conveying the gas.

Claims 12-15 (canceled)